REMARKS

Claims 1-4, 9-11, and 13-23 were pending in this application when the present Office Action was mailed (March 27, 2007). In this response, claims 1, 11, and 19 have been amended, and no claims have been canceled. Accordingly, claims 1-4, 9-11, and 13-23 are currently pending.

In the March 27, 2007 Office Action, all of the pending claims were rejected. More specifically, the status of the application in light of this Office Action is as follows:

(A) Claims 1-4, 9-11, and 13-23 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to satisfy the written description requirement;

(B) Claims 1-4, 9-11, and 13-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of the background information ("the Background Information"), the translation of Japanese Patent No. JP-63111177 to Mochizuki et al. ("Mochizuki"), and the translated Abstract of Japanese Patent No. JP-63020490 to Nakada ("Nakada"); and

(C) Claims 19-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of the Background Information, Mochizuki, Nakada, and U.S. Patent No. 6,689,220 to Nguyen ("Nguyen").

As a preliminary matter, the undersigned attorney wishes to thank the Examiner for engaging in a telephone interview on June 25, 2007. During the telephone interview, the Examiner and the undersigned representative discussed the claimed subject matter and the teachings of Mochizuki and Nakata. The Examiner agreed that the original claims with the foregoing amendments overcome the Section 112 rejection of the pending claims. The following remarks reflect and expand upon the points discussed during the June 25 telephone interview. Accordingly, the applicant respectfully requests that this paper also constitute the applicant's Interview Summary. If the Examiner notices any deficiencies in this regard, the Examiner is encouraged to contact the undersigned representative.

A. Response to the Section 112 Rejection

Claims 1-4, 9-11, and 13-23 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to satisfy the written description requirement. Without commenting on or conceding the merits of this rejection, independent claims 1, 11, and 19 have been amended as suggested by the Examiner during the June 25 telephone interview. Support for the amended subject matter can be found, for example, at page 11, paragraphs [0030] and [0031]. Pursuant to the agreement reached during the June 25 telephone interview, the Section 112, first paragraph, rejection of claims 1-4, 9-11, and 13-23 should be withdrawn.

B. Response to Section 103(a) Rejection of Claims 1-4, 9-11, and 13-18

Claims 1-4, 9-11, and 13-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of the Background Information, Mochizuki, and Nakada. The applicant respectfully traverses this rejection.

Claim 1 is directed to a method of depositing a layer onto a microfeature workpiece. The method includes placing a microfeature workpiece in a vapor reaction chamber and injecting a gas into a plasma zone in the vapor reaction chamber. The method also includes generating a plasma from the gas in the plasma zone that causes an electrically conductive material to be deposited on the microfeature workpiece and a window of the vapor reaction chamber at a deposition temperature and then remove the microfeature workpiece from the vapor reaction chamber. The method further includes transforming the electrically conductive material on the window into a substantially dielectric material after the microfeature workpiece is removed from the vapor reaction chamber using a process consisting of injecting a fluid containing at least oxygen into the vapor reaction chamber and maintaining the vapor reaction chamber at a maintenance temperature at least approximately equal to the deposition temperature. The method further includes repeating the placing, injecting, generating, and transforming processes with the transformed dielectric material remaining on the window.

Mochizuki discloses a method of converting a metal film deposited onto a window of a reaction chamber into a dielectric material (Abstract). Mochizuki discloses applying microwave energy through the window 11 to aid in depositing an aluminum film onto a base plate 22 at a temperature of 200°C and a pressure of 1 mTorr, and, as a consequence, an aluminum film is also deposited onto the window 11 of the reaction chamber 20 (at page 2, bottom left paragraph). When the aluminum film on the window 11 becomes more than 200 Å thick, the window 11 can be cleaned by redirecting the microwave energy to the vicinity of the widow 11 to oxidize or nitride the deposited aluminum film with an oxidizing or nitriding agent (at page 2, bottom right paragraph).

Nakata discloses a method of cleaning a film-forming apparatus by converting a high melting point metal on the inner wall of a deposition chamber into oxide or halide, which is sublimed and removed from the depositing chamber. (Abstract) In particular, Nakata discloses after removing a substrate 8 from the deposition chamber 1, the pressure in the deposition chamber 1 is reduced. (page 442) The deposition chamber 1 is then heated to 800°C, and an oxidizer is supplied to the deposition chamber 1. *Id.* As a result, a tungsten film on the inner wall of the deposition chamber 1 is converted into tungsten oxide, which is sublimated and trapped at the water cooler 6. *Id.*

Claim 1 is patentable over the combination of the Background Information, Mochizuki, and Nakata because the combined teachings of these references fail to disclose several features of this claim. As discussed during the June 25 telephone interview, Mochizuki does not disclose "using a process consisting of injecting a fluid containing at least oxygen into the vapor reaction chamber and maintaining the vapor reaction chamber at a maintenance temperature at least approximately equal to the deposition temperature." Instead, Mochizuki discloses converting the deposited aluminum film by redirecting the microwave energy. Nakata was instead cited for this feature. However, Nakata discloses a one-step process in which the metal film is oxidized and sublimed at the same time. As a result, further processing cannot be done "with the transformed dielectric material remaining on the window." Accordingly, the combination of the Background Information, Mochizuki, and Nakata fails to disclose at least the combination of these features.

Moreover, claim 1 is further patentable over the combination of these references because Nakata teaches away from performing further processing "with the transformed dielectric material remaining on the window." As discussed during the June 25 telephone interview, not only Nakata but also Mochizuki discloses that sublimating the converted metal oxide is advantageous for achieving better cleaning results. For example, Mochizuki discloses that a tungsten film can be converted into tungsten fluoride "with a high vapor pressure [which] vaporizes thus making possible cleaning of the microwave introduction window." (Translation of Mochizuki at page 10, lines 4-7) As a result, one skilled in the art would not modify Nakata's techniques to include converting the metal film into a metal oxide film and leaving the metal oxide film on the inner wall of the deposition chamber. Accordingly, Nakata teaches away from performing further processing "with the transformed dielectric material remaining on the window."

Claim 11 has been amended to include subject matter generally analogous to that of claim 1. As a result, claim 11 is also patentable over the cited references. Claims 2-4, 9, 10, and 13-18 depend from claim 1 or 11. As a result, these dependent claims are also patentable over the cited references for the reasons discussed above, and for the additional features of these claims.

C. Response to the Section 103(a) Rejection of Claims 19-23

Claims 19-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of the Background Information, Mochizuki, Nakada, and Nguyen. Without commenting on or conceding the merits of this rejection, claim 19 has been amended to include subject matter generally analogous to that of claim 1. As discussed above, the combination of the Background Information, Mochizuki, and Nakada fails to disclose several features of claim 1, and Nguyen fails to fill the void left by these references. As a result, claim 19 is patentable over the combination of the Background Information, Mochizuki, Nakada, and Nguyen. Claims 20-23 depend from claim 19. As a result, these dependent claims are also patentable over the cited references for the reasons discussed above, and for the additional features of these claims.

D. Conclusion

In view of the foregoing, the pending claims comply with the requirements of 35 U.S.C. § 112 and are patentable over the applied art. The applicant accordingly requests reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to contact the undersigned representative at (206) 359-6038.

Respectfully submitted,

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